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# QUALITY OF LIFE IN INFERTILE PATIENTS IN BRAZIL: RELIGIOUS SPIRITUALITY AS A COPING MECHANISM

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**Abstract:** Due to social pressure and individual desire to have children, infertility is often accompanied by suffering and decreased quality of life. Among possible coping mechanisms, religion has been suggested to help improve quality of life. The objective of this study was to verify, in a cohort of Brazilian women undergoing infertility treatment, if there is a relationship between religiosity and quality of life. The sample consisted of 104 volunteer Brazilian women who sought infertility treatment. A FertiQoL and a Religiosity questionnaire were administered. Descriptive statistics were computed, and groups were compared using a Chi-square test. Most of the participants in the study stated that religiosity was associated with well-being, and 90% of them concluded that religiosity was an important process during infertility treatment. The study found that religiosity leads to improved adaptive coping capacity. Although it is difficult to demonstrate causality, results strongly suggest that religiosity plays an important role in adjusting the psychological aspects of infertile women.

**Keywords**: female infertility, fertilization clinics, medicine, quality of life, religion

**Calidad de vida en pacientes infértiles en Brasil: la espiritualidad religiosa como mecanismo de afrontamiento**

**Resumen**: Debido a la presión social y al deseo individual de tener hijos, la infertilidad suele ir acompañada de sufrimiento y disminución de la calidad de vida. Entre los posibles mecanismos de afrontamiento se ha sugerido que la religión ayuda a mejorar la calidad de vida. El objetivo de este estudio fue verificar, en una cohorte de mujeres brasileñas sometidas a tratamiento de infertilidad, si existe una relación entre religiosidad y calidad de vida. La muestra estuvo compuesta por 104 mujeres brasileñas voluntarias que buscaron tratamiento de infertilidad. Se administró un cuestionario FertiQoL y un cuestionario de religiosidad. Se calcularon estadísticas descriptivas y se compararon los grupos utilizando una prueba de Chi-cuadrado. La mayoría de los participantes en el estudio afirmaron que la religiosidad se asociaba con el bienestar y el 90% de ellos concluyó era importante durante el tratamiento de la infertilidad. El estudio encontró que la religiosidad conduce a una mejor capacidad de afrontamiento adaptativo. Aunque es difícil demostrar la causalidad, los resultados sugieren firmemente que la religiosidad juega un papel importante en el ajuste de los aspectos psicológicos de las mujeres infértiles.

**Palabras clave**: infertilidad femenina, clínicas de fertilización, medicina, calidad de vida, religión

**Qualidade de vida em pacientes inférteis no Brasil: espiritualidade religiosa como um mecanismo de adaptação**

**Resumo**: Devido à pressão social e ao desejo individual de ter filhos, a infertilidade é frequentemente acompanhada de sofrimento e diminuição da qualidade de vida. Entre os possíveis mecanismos de adaptação, a religião tem sido sugerida para ajudar a melhorar a qualidade de vida. O objetivo desse estudo foi verificar, em uma coorte de brasileiras em tratamento da infertilidade, se há uma relação entre religiosidade e qualidade de vida. A amostra consistiu de 104 brasileiras voluntárias que procuraram tratamento da infertilidade. Foram administrados os questionários FertiQoL e de Religiosidade. Estatísticas descritiva foram computadas e grupos comparados usando teste do chi-quadrado. A maior parte das participantes no estudo afirmaram que a religiosidade estava associada com bem-estar e 90% delas concluíram que a religiosidade era um processo importante durante o tratamento da infertilidade. O estudo encontrou que a religiosidade leva a uma melhor capacidade de enfrentamento adaptativo. Ainda que seja difícil demonstrar causalidade, os resultados sugerem fortemente que a religiosidade joga um papel importante em ajustar os aspectos psicológicos de mulheres inférteis.

**Palavras chave**: infertilidade feminina, clínicas de fertilização, medicina, qualidade de vida, religião

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**Background**

Infertility, defined as the failure to conceive after one year of regular sexual intercourse without the use of contraceptive measures*(1)*, is considered a global health issue*(2)*. It is estimated that 15% of couples are infertile, and a 50% increase in cases has been observed over the past two decades*(3)*. For the purpose of the current study, it is highlighted that in Brazil, according to data from the Brazilian Institute of Geography and Statistics (IBGE), approximately 15 to 20% of couples of reproductive age have infertility*(4)*.

The desire to bear children and constitute a family is a constituent of human instinct and, under this premise, infertility has a potentially devastating effect on couples, leading to negative emotional effects and impacting various aspects of conjugal life*(5)*. In some cultures, there is still an increased social burden of infertility that may lead to feelings of guilt, loneliness, and social stress*(6,7)*.

Some authors have observed a relationship between infertility and conjugal dissatisfaction or distress, with negative effects on conjugal life*(8)*. Moreover, although a male factor is as prevalent as a female factor*(9)*, many still consider infertility mostly a female issue, especially in developing countries, or in countries where a maternal role is valued over the women themselves*(8,10)*. As a result, women are clearly even more affected by the difficulty in achieving motherhood, living in emotional stress and having a lower quality of life than men*(11-13)*. A recent study found a prevalence of up to 52% of depression symptoms in infertile women*(14)*.

Moreover, the impact of infertility leads many couples to physical, psychological, social, and spiritual distress, leading to questions regarding their existence*(15,16)*. In order to achieve emotional balance, some couples embark on a spiritual journey, seeking new meaning or purpose in life through understanding negative events*(16,17)*. A Koenig review (2012) pointed an association between spirituality/religiosity with quality of life and mental health, demonstrating a positive association with emotions such as hope, optimism, and purpose or meaning*(18)*.

Although there is no consensus on the definitions of religiosity and spirituality, Renetzky (1979) designates the spiritual dimension as: (i) the power within the human being, giving meaning, purpose, and fulfillment to life, suffering, and death; (ii) the individual's will to live; and (iii) the individual's belief and faith in himself, others, and God. In this way, religious practices and spiritual beliefs are involved by similar feelings*(19)* and, the context of this study, sought to analyze how much spirituality in connection with religion and the strengthening of the bond with faith reflects on the quality of life of the participants.

Studies have shown that belief in a divine being or in eternal life may lead to increased resilience; likewise, infertile couples have been shown to seek counseling from religious leaders more often than from psychologists or support groups*(17,20)*. It is also noteworthy that patients who have incorporated prayers in their infertility treatment routines have obtained increased success rates, and that religion is a good coping strategy for patients with traumatic and adverse situations*(21,22)*. The importance of treating the infertile couple in a way that embraces all their needs is already indicated by the European Society of Human Reproduction and Embryology (ESHRE) and it recommends routine psychosocial care to reduce stress and restore patients' well-being and adherence to infertility treatments*(23)*.

Finally, diagnosis of infertility is often difficult, both physically and mentally, and different coping mechanisms are often experienced throughout treatment. We hypothesize that religious belief and practice may be an important part of coping mechanisms in women undergoing infertility treatment in Brazil. Therefore, in this study we set out to assess, in a cohort of Brazilian women undergoing infertility workup and treatment for conjugal infertility, if religion is related to quality of life.

**Methods**

A cross-sectional study was carried out at the Assisted Reproduction Clinic – Gera Clinic – São Paulo unit. A total of 104 women were included, aged between 18 and 50 years old. Inclusion criteria were age (between 18 and 50 years old) and

a diagnosis of conjugal infertility. Institutional review board approval was received from the Itajubá School of Medicine (project number 3.846.249). Resolution 196/96 guidelines from the Brazilian National Health Council were followed.

Data were collected throughout 2020, via a Google Forms questionnaire, sent by email, and included an informed consent where the patient agreed to participate in the study. For data collection, the following questionnaires were applied:

FertiQoL (Fertility Quality of Life): An instrument translated and revised into Portuguese, consisting of twenty-six items, developed, and validated by Boivin et al. (2011)*(24)* that allows evaluation of the quality of life of men and women who experience fertility problems. Administration time was approximately 10 to 15 minutes.

General Questionnaire: Questionnaire developed for this current study by Oppenheimer et al. that consists of twelve items that assess religious aspects and the influence of religiousness on the quality of life of women with fertility problems. The questionnaire administration time was approximately 5 minutes. Patients were asked what religion or belief system they adhered, how often they participated in religious celebrations, and if this helped in coping with infertility, as well as other questions.

Data were analyzed using SPSS 18.0 for Windows®. Descriptive analysis was performed, with presentation of frequencies and percentages in each group, for the studied variables. Groups were compared using a Chi-square test. Statistical significance was set at 5%.

**Results**

In total, 104 volunteer women responded to the questionnaires. The first 26 questions corresponded to the FertiQoL questionnaire and the last 12 questions corresponded to the general questionnaire. Results are presented below, according to the order of the questions.

Individual perception of quality-of-life questions demonstrated that 89% of patients undergoing infertility treatment view their health as good or very good, and 61% are satisfied with their quality of life. On the other hand, many patients (67%) reported decreased concentration due to thoughts about infertility. In terms of dealing with the problems of infertility, 43% of patients reported they were able to advance their life plans despite fertility problems, but 26% find it moderately difficult and 31% reported difficulty. Also, 37% of patients felt very or completely exhausted. However, 53% of respondents felt they were partially able to deal with their problems of infertility.

Several women (45%) were very satisfied with the support they have received from friends, but 35% admitted they were more or less satisfied and 20% said they were little or not at all satisfied with the support they received from friends. Most (69%) also reported they are satisfied with their sex life, despite infertility and, although there is difficulty in achieving pregnant, 63% of patients report they are affectionate with their partners (and vice versa), and only 7 % report they are rarely or never affectionate.

When asked about their feelings, 61% of women reported they never or rarely are jealous or rancorous due to infertility, but most patients report being anguished: 46% all the time or often, and 35% sometimes. Most (79%) fluctuate between hope and despair rising from infertility, and over half (51%) feel isolated.

Half of the respondents described their infertility issues interfered with their daily obligations. Moreover, 58% of patients declared discomfort in social situations. However, only 20% felt their family never or rarely understood the problems they were facing, 34% responded their family sometimes understands them, and 46% think that family members are often or always able to understand the infertility problems they face. Moreover, 53% of women interviewed stated their dedication to their partner was strengthened due to their infertility.

Patients also responded with feelings of sadness related to infertility: 45% reported they often or always felt sad and depressed, 32% rarely or never and 23%, sometimes. Also, most patients reported feelings of inferiority to child-bearing persons (71%). Finally, 54% of patients described fatigue.

Although 53% of respondents had declared their relationship strengthened due to infertility, 68% indicated a negative impact of infertility on their marital life, and 53% admitted difficulty in communicating with their partner about infertility. Most (76%), however, are satisfied with their relationship. Aside from difficulty in achieving pregnancy, 50% of patients often or always and 21% sometimes feel social pressure to have children and many (69%) patients feel irritation due to infertility; 51% do not feel physical pain.

The general questionnaire indicated that 66% were in their first treatment, 57% sought or had sought alternative treatments, and 84% changed to a healthier lifestyle. It also provided information about the patients' religion/sect or belief. Most patients declared they followed some religion (figure 1), and most (68%) are engaged in its activities. Over half attend a session, at a temple or equivalent, at least once a week.

In total, 62% of women did not change their religious habits due to infertility. It was found that 93% of patients resort to prayers or religious texts, and religiousness is important to the well-being of 95% of respondents. Most (71%) patients read religious texts or pray daily and 88% believe prayer helps them face their difficulty in achieving motherhood. Patients related that prayers bring them hope (47%), calm (18%), comfort (12%), tranquility (10%), or inner peace (10%), and 3% feel praying is important for personal growth.

The results of the analysis of variables that showed a significant difference in the comparison using the chi-square test are presented below. Patients were more satisfied with their quality of life when they had altered their lifestyle ($p<0.05$) (figure 2).

Women more or less satisfied with the support they have been receiving from friends regarding infertility were those who considered religiousness less important than either woman who declared to be satisfied or unsatisfied with the support received from friends. These patients also reported more frequently resorting to prayer or religious reading when compared to women who were mostly or completely unsatisfied with support received from friends.

Patients who reported frequently or always feeling jealous or rancor due to infertility more frequently altered their habit to attend sessions at a temple or equivalent. Patients who never or rarely fluctuated between hope and despair (13.6%) less frequently altered their habit of attending a session at a temple or equivalent. On the other hand, patients who felt isolated more often altered their habit to attend a session at a temple or equivalent, as did patients that related discomfort in social situations.

Patients that reported feeling understood by their families regarding infertility only at times more frequently sought prayer or religious reading, when compared to patients the never or rarely felt understood. Also, patients that reported feelings of sadness or depression often or always more frequently altered their habit of attending sessions at a religious temple or equivalent when compared to women who rarely felt sad (figure 3).

A lower percentage of women declared that infertility negatively impacted their relationships when they participated in any religion, than in those that did not. Patients that reported social pressure to bear children often or frequently were more frequent in their attendance at religious temples or equivalents, and more frequently prayed or read religious texts.

Patients often or always irritated at infertility issues were also more prone to alter their religious habits in terms of frequency of attendance, when compared to women seldom or never irritated. Moreover, patients in a first treatment cycle were less prone to alter that habit. Finally, patients that changed to a healthier lifestyle were less prone to attend sessions at a religious temple or equivalent than patients who did not.

**Discussion**

Achieving motherhood and fatherhood is a central purpose for couples of many different cultures*(25)* and receiving a diagnosis of infertility goes well beyond physiologic and laboratory issues, leading to a psychological process characterized by changes in habits and religious standards for couples. Women that deal with infertility undergo not only a physical, but also an emotional process,

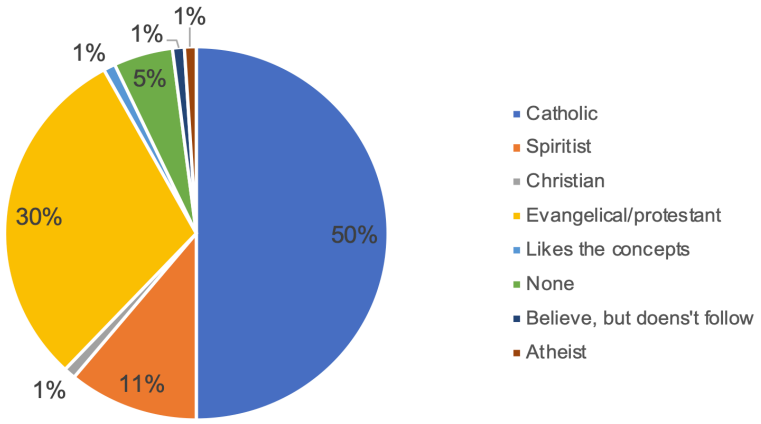



Figure 1. Question 27: what is your religion/belief, if any?

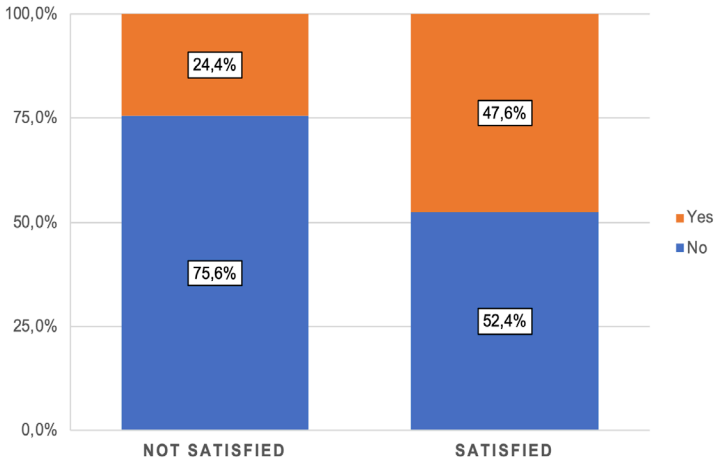



Figure 2. Comparison of change in religious habit in women according to their satisfaction with quality of life.

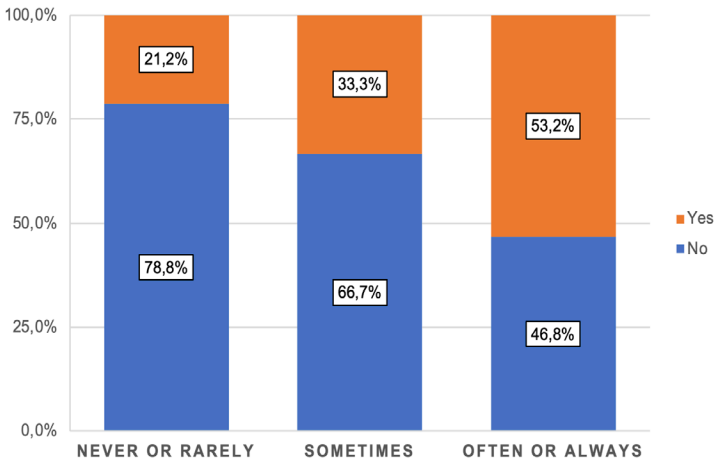



Figure 3. Comparison of change in habit of attending sessions in a temple or equivalent in women according to their frequency of feeling sad or depressed.

before and during infertility treatment*(15,26,27)*. It is understood, then, that infertility treatment also encompasses mental health in many couples; as demonstrated, difficulty or impossibility to achieve pregnancy may lead to feelings of anguish or inferiority in child-bearing people.

This study allowed us to observe the effects of infertility on women in a Brazilian cohort, demonstrating infertility leads to medical situations, as well as social, familial, and religious issues. Moreover, we have demonstrated the manner through which patients cope – both emotionally and socially – with infertility, and their changes in habits following diagnosis of infertility. It is important to emphasize that it was appropriate for the analysis of this study to consider religiosity and spirituality as a single aspect, understanding that spirituality is a personal path in search of meaning to questions about life, and religiosity is related to the individual's belief and religious practice*(18)*. Furthermore, it is also important to clarify that scientific evidence shows the importance of prayer and spirituality in the quality of physical and mental health of patients, as well as in the way they respond to stressful situations*(28)*.

Thoughts of infertility were associated to disturbance in concentration, and many women found it difficult to move on with their life plans; this, in turn, as was demonstrated by Tamannaifar (2011), could lead to feelings of dissatisfaction in life*(29)*. Conversely, results showed that women were resilient to negative feelings and leading with difficulty, because, although many felt exhausted due to infertility, most demonstrated confidence in dealing with the problem.

Many studies have demonstrated reduced self-confidence, increased anguish, depression, stress, and sexual dissatisfaction stemming from infertility, directly affecting the quality of life*(6,7,30)*. In our study, 81% of women admitted to feelings of anguish, and most related they alternated between hope and despair, demonstrating that infertility is associated with emotional distress. A study by Rooney (2018) demonstrates that negative feelings arising from infertility such as shame, guilt and low self-esteem can lead to different degrees of depression and anxiety*(31)*. Also, many women confirmed social crises, stating they feel discomfort in participating in social events, corroborating with authors who state that the majority of infertile women do not share their journey and adversities with friends and family, thus increasing their psychological vulnerability*(31)*. Karaca and Unsal (2012) discuss this, when they state that, in some societies, infertility leads to incapability of living up to social expectations*(32)*.

Moreover, many times, couples in treatment for infertility seek support from religion, leading to improved resilience and quality of life. Importantly, results in our study demonstrated women who were satisfied with their quality of life more frequently altered their habit of attendance at religious temples or equivalents. There is a need to clarify here that, although there is no consensus on the definition of quality of life, according to the WHO, quality of life is an individual's perception of their position in life, in the context of culture and value systems in which that individual lives about his or her goals, standards, concerns, and expectations*(33)*.

In regards to religion, 68.34% of respondents declared to participate in some religious activity, of which 50% were Catholic. Klitzman (2018) stated that a search for religious belief leads to improved outcomes in infertile patients, and that this is expected in situations of internal conflicts in patients*(34)*. In a study in the USA, 51% of respondents were protestant, and 26% were Catholic*(17)*. This occurs because of sociodemographic differences between the USA and Brazil – in the latter, Roman Catholicism is the predominant religion, which explains results in this study*(4)*. In regard to aspects related to religious practice, 93.23% of participants stated they regularly prayed, and two-thirds that they read daily passages from religious texts. Braga et al. (2019) stated that most patients in their study referred to regular prayer and religious reading, as in our study. The authors infer that decreasing the frequency of prayers is negatively associated with a positive outcome, while maintaining prayers improved response to ovarian stimulation*(21)*.

It is important to highlight that the possible support that infertile women seek in religiosity/spirituality is a very personal aspect, difficult to measure, but it is noted that the search is a coping

mechanism and a different view of reality. Through the interviews carried out in this study, it is suggested that religion and/or spirituality can convey a sense of comfort and, mainly, of hope, making it possible to believe in the main achievement of life, even if there is difficulty in achieving it.

Religiousness was referred by 95.19% of participants as having a positive impact on patients' well-being, and 9 in 10 respondents identified religious belief as a support mechanism for coping with infertility. These results demonstrate a positive role for religiousness in improving patient well-being during treatment, which agrees with findings from Casu et al. (2018), who stated that spirituality and religiousness may provide a positive resource in dealing with infertility, as a means for improved quality of life in these couples*(35)*. A study with 264 women undergoing infertility treatment identified that the main negative feeling attributed to failure to achieve pregnancy was depression, and that hope was the predominant feeling when they sought medical care*(36)*, as was found in this study.

When we sought to verify patient satisfaction with support from family and friends and with daily prayers, we observed that patients were most satisfied with support from friends in women with daily religious habits. Therefore, frequent religious habits were better prepared to understand their situation and face the sentimental challenges, which is in accordance with Grinstein-Cohen et al. (2017), who identified that patients declared that social difficulty and experience were more painful than treatment itself, and that religiousness improved negative feelings*(37).* Collins et al. (2018) further demonstrated the importance of religiousness in facing infertility by showing that three in four patients seek religious or spiritual support, while little over half seek medical care*(17)*.

In regard to feelings of sadness and depression stemming from infertility, when related to attendance in religious temples or equivalents, results from our study demonstrated a gradual increase in search for religion in women with negative feelings towards infertility, demonstrating these women seek emotional support in spirituality of religiousness. This is in accordance with Romeiro et al. (2017), who described that the adversity these patients underwent produced spiritual needs in these women as a coping mechanism, incorporating religious teachings as tools to overcome these challenges*(38)*. Likewise, when irritability was correlated to search for the religion, increased attendance was found in women with higher stress levels, similar to the Portuguese study. Tiu et al. (2018) further demonstrated the need for psychological support for patients with increased irritability or stress due to ovulation problems attributed to mood swings*(39)*. The study also suggests that spiritual or religious measures should be employed in order to reduce stress, thus improving results.

Social pressure to bear a child has been related to religious reading habits and to frequency or attendance in religious temples or equivalents, and in both cases, increased social pressures were associated with increased religious habits. Öztürk et al. (2021) agree with the results of this study, demonstrating that social pressure in infertile women is greater than that faced by primiparous fertile women, and that this leads to emotional distress with a need for psychological support, either by specialized psychologists, or by religious practice*(40)*. As a socioeconomic counterpoint to the previous findings, a study from Gambia demonstrated similar results regarding psychological pressure and the search for spiritual support, demonstrating that African populations are prone to seek, frequently, solace in biblical texts or in religious temples*(41)*. Hanselin et al. (2017) stated that infertile patients tend to seek emotional support in religion, but also acknowledge that some religious views may increase psychological pressure in patients*(42)*. Therefore, spirituality and religiousness may play important positive roles in dealing with social pressure faced by patients; however, they suffer the influence of conservative interpretations, which may lead to increased emotional angst.

**Limitations**

The present study, as it touches on the personal issues of respondents, has some limitations. First, number of participants was lower than initially planned. We also noted the difficulty of the interviewees when the approach had intimate repercus-

sions, such as marital relationships and family life. In addition, there was no characterization of the studied sample regarding the underlying disease, duration of infertility, male or female factor of infertility, age, and other demographic data. Finally, the relationship between attitudes of coping with infertility was not sufficiently clarified, but the positive result of spirituality could be noted.

It is important to highlight the difficulties encountered in the study as a recommendation for future investigations on the same topic.

**Conclusion**

This study sought to elucidate how patients cope with infertility. It is noteworthy that religiousness leads to improved adaptive capacity, due to the spiritual quest to decrease suffering brought upon by the absence of children, and by improving quality of life. Sadness, depression, irritability, lower quality of life, and social discomfort were greater in patients with no religious belief, as was a decreased perception of support from family and friends.

While the exact relations may not have been adequately demonstrated, results from this study strongly suggest that spirituality plays an important role in adjusting the psychological aspects of infertile patients.

**Declarations**

Ethics approval and consent to participate.

Institutional review board approval was received from the Itajubá School of Medicine (project number 3.846.249). Resolution 196/96 guidelines from the Brazilian National Health Council were followed.

**Consent for publication**

Not applicable

**Availability of data and materials**

The datasets used and/or analysed during the current study are available from the corresponding author on reasonable request.

**Competing interests**

The authors declare that they have no competing interests.

**Funding**

Not applicable

**Authors' contributions**

DO – conception of the study, data collection, results interpretation, drafting of the manuscript. Final approval for submission.

CC – conception of the study, results interpretation. Final approval for submission.

GF – conception of the study, results interpretation. Final approval for submission.

CF – conception of the study, data collection, results interpretation. Final approval for submission.

FR – conception of the study, results interpretation, correction of the manuscript. Final approval for submission.

RN – conception of the study, results interpretation, correction of the manuscript. Final approval for submission.

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